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**GLOBALIZATION AND GOALS:
Does soccer show the way?**

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ABSTRACT

Soccer (football in the non-American terminology) is the most globalized sport. Free circulation of players has markedly increased during the last ten to fifteen years as limits on the number of foreign players in the European leagues have been lifted, and clubs have become more commercially-minded. On the other hand, the rules governing national team competition have remained restrictive: players can play only for the country where they were born. We show that, in a model where there is free circulation of labor, increasing returns to scale, and endogeneity of skills, this produces on the one hand, higher overall quality of the game and increasing inequality of results among clubs, and on the other hand, lower inequality in the national teams' performances. The empirical examples from the history of the European Champions' League and the World Cup support the implications of the model. We argue in the conclusions, that soccer's global rules allow poor countries to capture some of their "leg drain", that is the improved skills which their players have acquired playing for better foreign clubs. This provides an example as how forces of efficiency but also inequality unleashed by globalization can be harnessed by the existence of global institutions to help improve the outcome for the poor countries.

Key words: globalization, soccer, labor.

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1. Introduction

The issues of increasing returns to scale, technological transfer and endogenous skills have received a lot of attention from the new literature on growth. Its objective was to show how violations of some neoclassical assumptions might lead to the concentration of capital and labor in the most developed parts of the world, or most developed parts of a country (see Easterly 2001 and the references there). This is the opposite of what we would expect if the diminishing marginal productivity of capital or skills were to hold, for then their returns would be greater in less capital- or less skill-rich countries and hence the incentive to move there would be greater. With these new assumptions, one is better able to explain Lucas's (1990) paradox of capital flowing from rich to rich countries, or of the increasing inequality (divergence) between per capita incomes of the countries of the world.

An almost perfect example to address these issues is the field of soccer. Soccer (football in the non-American terminology) is easily the most globalized of all sports, where globalization is defined as the ability of players to move between clubs and countries. Globalization, while always present in soccer, has increased by leaps and bounds in the most recent period as limits on the number of foreign players have been all but lifted in the soccer's main market (Europe), and as clubs have become much more commercialized moving away from their old "socially-conscious" role where they often functioned as part of trade unions, political parties or community organizations. The question we want to address is the one of the effects of free circulation of labor combined with increasing commercialization on the concentration of soccer quality in a few top clubs.

But in addition to the club arena which is now almost wholly commercialized, soccer is very interesting because it also has the national team arena where the rules, imposed by the soccer world-wide governing body of FIFA (*Fédération Internationale de Football Association*), severely limit the role of money and do not allow labor mobility—that is, do not allow players to change national teams. It is this combination of a purely commercialized and an almost uncommercialized domain in the same activity that enables us to study the effects of two different institutional arrangements on the concentration of quality, or differently put on inequality. As we shall argue in the Conclusions, it is also this combination of commercialization and regulation that, we believe, presents some interesting lessons for the future of globalization and for the introduction of some global rules whereby the potential unleashed by globalization is harnessed to help the poor.

2. The model

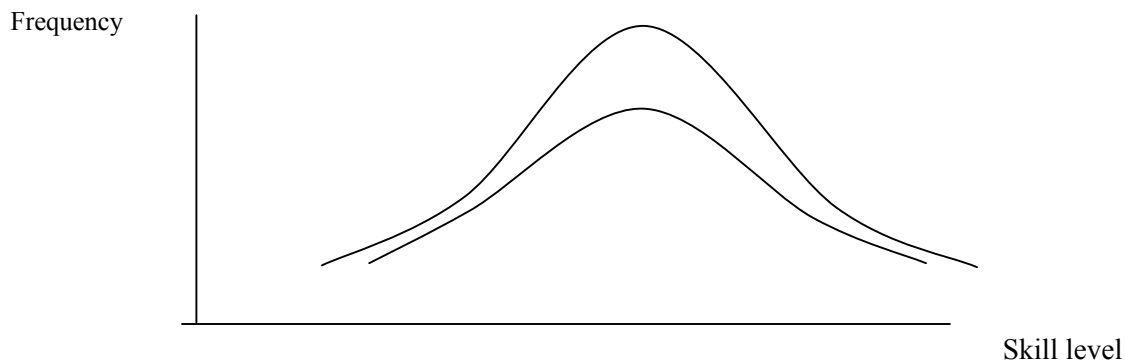
Skills and soccer production function. Suppose that the skills of players are ordered in such a way that $A > B$, $B > C$ etc, and after $Y > Z$, that $A' > B'$ all the way to $Y' > Z'$. Differences between skill levels are constant so that $A - B = C - D = \text{constant}$ etc. Let also there be 26 countries each with two players of different skills. (Obviously, we could multiply both the skill levels and the number of countries but the generality of the results is not affected by our assumption.) Finally, let the production function of a soccer team g_i (for goals) be of the type

$$g_i = S_1 S_2$$

where subscript i denotes the soccer team, and S_1 and S_2 skill levels. Then, a team employing players with levels K and L will have a production function $g_i = KL$. The production function is multiplicative indicating increasing returns to scale as well as complementarity of skills. Clearly, if a player of a given skill plays with a better player, the output will increase in constant terms with the skill of the co-player.

We next assume that skills are distributed within each country normally (or at least symmetrically as shown in Figure 1) but with more populous countries (where populous is defined in terms of number of registered soccer players, both amateurs and professionals, or just as the number of people who play soccer) having a greater variance of skills. Thus, more populous countries will have both more players (in absolute numbers) at each level of skills, and will have more highly skilled players. The distribution of skills in two countries (large and small) is displayed in Figure 1.

Figure 1. Skill distribution in more and less populous countries



As we can easily see, the most skilled player(s) will be found in the largest (soccer) countries. The number of people (in the world) who become soccer players will be determined by the overall world demand for soccer. But, in accordance with our earlier assumptions, we take it that the demand is such that only players down to the level of Z' are accepted, that is only people with skills equal and above that level will find a job as professional soccer players.

The final assumption concerns the distribution of skills by countries. The most populous country will have the player(s) with the top skill A, and, of course, it will have players with lower skills too (this is derived from the assumption of the skill distribution in Figure 1). Let the next populous country have its best player with the skill B, the best player in the third most populous will be with the level C etc. Once we have exhausted all the countries, with the smallest soccer country's best player having skill level Z, we look at the second best player by country. The second best player in the most populous country will be of level A', and thus again all the way to the second best player in the smallest country being of the level Z'. Consequently, the most populous country will have, in the professional soccer, players of levels A and A'; the second most populous country of levels B and B', etc. and the smallest country players of levels Z and Z'.

Skill levels and countries' rank by soccer population will thus coincide (in terms of notation). Think of the most populous country as Brazil: it will have (two) professional soccer players and their levels will be A and A'; the second most populous country may be Italy with skill levels B and B' etc.

No mobility of labor. We assume that in each country, there is only one commercial professional club, and of course one national team. The production functions whether for clubs or for national teams is of the same form since soccer is the same game whether played between clubs such as Manchester United and Real Madrid or between national teams such as Brazil and Germany. If there is no mobility of players between countries, the quality of the club and of the national team will be the same since the same players will play in both. Thus Brazil's only club's (think of Santos from Sao Paolo) and Brazilian national team's, production functions will be

$$g_A = AA'$$

The smallest soccer-wise country and its club will have a production function

$$g_Z = ZZ'$$

The top to the bottom quality ratio will, in such a world, be AA' to ZZ'—both for the clubs and for the national teams. If, for illustrative purposes, we give to the top skill level (A) value of 52, the next level 51 etc....all the way to Z'=1, then the production function of the most populous country will be 52x26, of the second largest country 51x25 and of the smallest country 27x1. The Gini coefficient of inequality in skill quality (or in goals) calculated across all countries will in that case amount to 38.9.

Introducing mobility of labor. Let us now introduce mobility of labor, or the possibility of the “leg drain”, that is of players changing the club for which they play by moving to a country different from theirs. Notice an important definitional difference between clubs and national teams. Clubs are commercial entities that maximize profits and that buy and sell players. The national teams' rules are different: only those players born as (say) Brazilians can play for Brazil. This is by the way an almost 100 percent

accurate description of the difference between clubs and national teams in soccer. Ronaldo, Maradona or Beckham can (and did) play for a number of clubs but only for respectively Brazilian, Argentinean or English national teams.

The prefix “almost” in the earlier sentence is needed to indicate that the national team rule is such that one cannot change his national teams once he has played for it. But if for example (as we have seen in a few instances) a Nigerian player, who has never been selected for his national squad and who comes to play for a club in Poland, is then offered the possibility of the Polish citizenship and of joining the Polish national team, and if he accepts that (and in this case specific case, he did) he is allowed to play for the Polish national team. The key requirement is that he has not played for any other national team before. Had he even once played for the Nigerian national team, the change in citizenship would not have mattered at all. Likewise his decision to play for the Polish national team means that he cannot ever play for another. There is thus a uniqueness in the relationship between a player and a national team, a uniqueness that is almost always determined by one’s place of birth, and a uniqueness that is absent in the relationship between players and clubs. The just explained rules were introduced in the late 1960’s in order to prevent spurious changes in nationality and thus national teams becoming more like clubs.² It is precisely this difference between club and national team rules which will make the introduction of labor mobility affect them differently, and which will be the core part of our argument. In addition, national team is one off activity largely devoid of significant direct commercial interest to players;³ clubs is where people’s activity takes place and where players earn their money. Clubs are they day jobs.

Consequently after the introduction of full labor mobility, there will be no change in the production functions at the national level. The top country’s national teams’ production function remains AA’.

Consider the club scene now. Let the richest (country) club, in the soccer sense, be able to acquire the most talented players, both A and B; the second richest country, the next “crop” of players, C and D and so forth.⁴ It does not matter whether the richest club is from the most populous country or not. For the sake of intuitive understanding,

² Ladislav Kubala, originally from Hungary was the most famous player in this respect, He was probably the only player in history to have played for three national teams: Hungary, Czechoslovakia and Spain. Also, in the 1930’s Italy used to give citizenship to the best Argentinean players of often dubious Italian extraction (the so-called “oriundi”) in order to let them play for the Italian national team. Raimundo Orsi and Luisito Monti were the most famous examples, Monti moreover the only player in history to have played the two World Cup finals for two different countries, Argentina in 1930 and Italy in 1934. Notice that in those years the mobility of labor which was much inferior to today’s applied equally to both clubs and national teams.

³ Obviously there could be indirect financial gain from playing well in a national team. International competitions like the World Cup is akin to a huge market place where, playing under the eye of the world audience and most experienced coaches, heretofore unknown players have a chance to attract attention to themselves, become famous and garner lucrative club contract. But no player has ever become rich from the money earned while playing for his national squad.

⁴ Recall that the assumption one country = one club still holds.

suppose that the richest country (where we can think of it as GDP per capita corrected for soccer interest of the population)⁵ is Spain. We assume it sufficiently richer than the second next country (say, Italy) so that its club can acquire both top players. Similarly, Italy must be sufficiently richer than the next best country (say, England) so that it can acquire both players C and D etc.

The production function of the club (in Spain) will now be AB, the production function of the club in Italy CD, in England EF etc, all the way to the production function of the club in the (soccer) poorest country Y'Z'. The top-to-bottom ratio for the clubs will have increased from

$\frac{AA'}{ZZ'}$ to $\frac{AB}{Y'Z'}$. Using the same illustrative numerical example, the Spanish club's production function value will be 52x51, the Italian club's 50x49 etc, and the poorest country's club 2x1. The Gini coefficient (of concentration) will have increased to 49.5. Notice also that, because of the multiplicative nature of the production process, the average quality of soccer will have increased; in our illustrative numerical example, it will have risen by more than 50 percent.⁶ In conclusion, the quality of the game would go up, there would be greater concentration of quality among the clubs, but nothing will have changed regarding the national teams.

Endogeneizing skills. So far we have assumed that skill levels are given. We have thought of them as innate to individuals. But it is quite reasonable to assume that skills improve in function of people with whom players interact. We can see this as an augmenting technological change. Now it is only clubs (in which players play more than 90 percent of their overall number of games, and spend more than 95 percent of effective time), that matter for skill improvement. The national team simply takes these skills as given. It does not add or detract from them.

Since each club is composed of a pair of players we shall assume that only the less good player's skills improve while those of the better player remain the same. However, the improvement cannot be such as to overturn the ordinal ranking. Thus the new skill level of player B will $B\gamma(A) < A$ where gamma denotes the skills improvement function. The gamma function will be increasing in skill level, that is $\gamma'(s) > 0$ and possibly too $\gamma''(s) > 0$ although the sign of the second derivative does not really matter for our results.

⁵ We assume soccer interest of the population to be exogenous. It would greatly complicate the matters if soccer interest itself were endogenous, that is depended on who plays in that country's club. This is not, however, an unreasonable assumption for indeed people's interest increases when club buys good players. Yet, as the experience suggest, there must be some pre-determined level of interest. Otherwise Ronaldo would be playing in Los Angeles rather than in Madrid.

⁶ The average quality is obtained as the sum of qualities of all clubs (say, 52x51 + 50x49 etc) divided by 26 clubs.

The effect of endogenizing skills will be obviously to further widen the differences between the clubs. The top-to-bottom ratio will now be $\frac{AB\gamma(A)}{Y'Z'\gamma(Y')} > \frac{AB}{Y'Z'}$ because $\gamma(A)/\gamma(Y') > 1$.

Endogenous skills will have an effect on the quality of national teams. Consider the national team of the most populous country A. Its production function will be unchanged at AA' (these two players play in clubs where they are the best players so their skills, by assumption, cannot improve). The second national team's production function will however be BB' $\gamma(A)$ $\gamma(A')$ etc. The distance between the two best national team will be reduced, but the distance between the second and the third national team will increase. The same regularity will continue for all the other ordered pairs. The overall effect of such a change on a mean-normalized measure of inequality (like the Gini) will be to reduce it because the sum of absolute distances will remain unchanged while the average skill level will have increased.⁷

However, endogeneity of skills exists independently of mobility of labor. It is thus reasonable to assume that it has existed even before national borders opened up. In that case, the quality of the best national team, prior to the opening of borders, was AA' $\gamma(A)$, the quality of the second was BB' $\gamma(B)$ etc. Thus, the top-to-bottom ratio before the opening of borders was

$\frac{AA'\gamma(A)}{ZZ'\gamma(Z)}$ and after the opening of borders $\frac{AA'}{ZZ'\gamma(Y)\gamma(Y')}$. Since $\gamma(.) > 0$, inequality must have unambiguously declined after the opening of borders—if skills are endogenous. Notice for example that the quality of the top national team has *declined* because neither of its players benefited from playing with players better than himself. In the past however player of skill level A' benefited from playing with a player of skill level A. This seems an a priori plausible conclusion. For taking the two Brazilian stars Ronaldo and Lucio as players of levels A and A', it is reasonable to believe that had Lucio played with Ronaldo in the same club in Brazil, his skill level would have improved. But if Lucio is the best player in Bayer Leverkusen there is no one there from whom he can learn new skills. On the other hand, small soccer nations would gain since their players will now play with those who are better than they and from whom they can learn.⁸

Implications. We have seen that the introduction of labor mobility under the conditions of uneven concentration of financial power of the clubs will have increased

⁷ Before, the average skill level in the world was ZA', now, it is $Z\gamma(Y)A'$.

⁸ In words of Bruce Arena, the former US national team coach, "There's no doubt that a number of [American] players have benefited playing outside the U.S."... "We are helped at the national level by having a nucleus of players who are training and playing at the highest levels." (available at <http://www.soccertimes.com/wagman/1999/dec23.htm>).

concentration of club quality but left the differences between national teams unchanged. When we introduce endogeneity of skills too (that is, when we combine international mobility of labor and endogenous skills) the club quality will become further concentrated while the national teams quality differences will be reduced. In the next section, we shall present some empirical evidence regarding these hypotheses.

3. Empirical analysis

In the empirical part, we shall test our hypotheses on how globalization affects inequality among clubs and nations on three examples of the premier competitions between the clubs and nations. These are the Champions' League (formerly, the Cup of Champions), the most distinguished European club competition; Italian Serie A, arguably the best national club championship, and World Cup, the most important soccer competition between countries. We shall look at what happened to the concentration of quality among clubs, and then among nations, after the introduction of free mobility of labor.

The absence of free labor mobility in soccer was always an issue of the demand side. That is, there was never any Brazil-based impediment for a Brazilian player to go play in Italy. The problem was that the number of foreign players in the largest soccer countries, that is the richest countries in our model where the financial demand for a given skill level is the greatest (Spain, Italy, Germany, England), was subject to a quota. Normally only up to two or three foreign players were allowed to play in a club. Thus, for example, the most powerful European clubs (AC Milan, Inter or Real Madrid) could use only two non-Italian or non-Spanish players in their games. The rules were particularly restrictive for national championship where they remained in effect until the mid-1980's. For the European club championship (Cup of Champions) the rules began to be relaxed a bit earlier: for example, clubs were allowed to field three instead of two "foreigners." The quotas thus played a role of limiting the demand for players and impeding (or preventing) free circulation of labor.

The biggest turning point in this area came with the Bosman rule. Bosman was a Belgian player who played for FC Liege and who in 1995 sued his club and the Belgian soccer association, and later the European Soccer Association (UEFA) for preventing his transfer to a French club. He argued that the transfer rules and nationality clauses were not compatible with the Treaty of Rome and free movement of workers. The European court ruled against the right of the club (in this case, FC Liege) of asking for a transfer fee after the contract with the player had expired.⁹ The court also ruled against the then existing practice of limiting the number of foreign players and treating players from other European Union countries as foreigners. As mentioned, Italian clubs treated its French or Dutch players differently from its Italian players—a thing which was not allowed in any other economic activity. The European court thus ruled that the difference of treatment of the nationals from other European Union countries was anti-constitutional. This opened the floodgates for a fully free movement of players within the European Union, and

⁹ On the consequences of the ban on transfer fees, see the recent article by Feess and Muehlheuser (2003).

buried the two-foreign players rule. The limits on non-European nationals still remained, but were gradually raised to six or more in Italy, and were entirely lifted in England and Spain. Today, for example, London's Chelsea at times fields as many as nine foreign players (out of 11), a thing absolutely out of the realm of the possible only a decade or so ago.

Removal of the limits on labor movement occurred (and might not have been altogether independent) from a movement toward much greater commercialization of club-level soccer. London's Chelsea is now owned by one of the Russian oligarchs (Roman Abramovich), and Manchester United, for example, is a company whose shares are traded on the London Stock exchange. Clubs began to be run much more like commercial enterprises than it was the case in the past where social and political concerns loomed larger. For example, Juventus was bought by the Agnelli family in the 1920's mostly as an adjunct to their FIAT Motorworks. Its objective was to promote loyalty to FIAT among the newly-arrived Southern Italian workforce and to provide their Sundays with some entertainment. Innumerable clubs were formed as amateur, trade-union or political associations in the vein of what after the work of Putnam we are used to see as social-capital building voluntary associations. This was the trend much in evidence in Europe in the period between the turn of the century and the Second World War (when most of today's great teams were founded). A typical pattern was that the clubs were formed around some common non-commercial interests, be it amateur sportsmanship of the inter-war German and Central European variety (*Frei Kultur Korps*) that glorified physical education, influence of English migrant workers,¹⁰ ethnicity, or perhaps most importantly, political preferences.¹¹ In many countries where Communist parties were banned in the inter-War period, left wing associations operated under the guise of soccer teams, thus promoting their cause as well as camaraderie among the members. But in the Europe and South America of the sixties and seventies, this was gradually changing as commercial interests and motivations became more important than the building of social capital. The opening up of the 1990's was a logical conclusion of the process. And indeed this was how full-fledged globalization came to soccer.

As already mentioned, we shall study the effects of globalization on soccer (clubs and national teams) by looking at the concentration of quality (measured by the

¹⁰British expatriates were very influential in creating a number of soccer teams around the globe. Some of that influence is still visible today in clubs' names: AC Milan (not *Milano*), River Plate from Buenos Aires, Grasshoppers in Switzerland, Athletic (not *Atletico*) Bilbao from the Basque country etc. The Argentine soccer federation was founded by an Englishman.

¹¹ The first almost entirely Jewish teams were Hakoah, the winner of the first Austrian professional league in 1925, and MTK in Hungary. The former began as a way "to create healthy youths who might one day take residence in Palestine" (Murray, 1998, p.53). Another burning social issue, particularly in Brazil, was the integration of blacks. Political undertones, particularly so for the teams hailing from the same city, were never absent from soccer: "royal" Madrid vs. autonomy-minded FC Barcelona, left-wing Roma vs. right-wing Lazio, AC Milan vs. its internationalist splinter of Inter, "people's club" of Boca Juniors vs. the "millionarios" of the River Plate, solid bourgeois of FC Torino vs. workers (and fascists) of Juventus, nationalist Red Star of Belgrade vs. Titoist Partizan, Army-supported Moscow CSKA vs. KGB-preferred Dynamo, the "bourgeois" Slavia, Prague vs. the Army-founded and Communist Dukla, the anti-Semitic Ferencvaros of Budapest vs. the Jewish MTK.

concentration of results) in the Champions' League and the World Cup. Note that the very change in the name of the Champions' League (from Cup of Champions) was indicative of the dramatic change in the structure of the competition and its commercialization. Before the change, the Cup involved only the champions from each European nation. But that meant that Malta provided one club, the same as the immeasurably better Italian Serie A. This was a one country=one vote system. If one wanted to make sure that the competition makes more money, one had to attract the really best European clubs to participate in it, which meant not only one but possibly several Italian, or English or Spanish clubs, and similarly to limit the access to the small European clubs.¹² Thus, nowadays, better European leagues have each three slots in the Champions' Leagues, the second-tier leagues have two slots etc. all the way to the countries that have no participants in the League at all.¹³ For example, in the 2003 edition of the Champions' League, only 15 out of more than 40 European countries have a participating club.

For the Champions' League we use two measures of concentration: the number of teams who have reached the quarterfinals within each five-year period, and the Gini coefficient of success within each five-year period. We use the five-year periods since a measure of quality concentration that we have in mind implies a persistence in quality: the same (rich) teams are best from year to year. Five-year period is a reasonable period over which this concentration can be observed and calculated.

We need to explain the logic behind these two measures. The maximum possible dispersion would occur if each year there would be eight different clubs who would qualify for the quarterfinals. Thus, over the five-year period, we would have a total of 40 clubs who would have been quarter-finalists. The maximum possible concentration, of course, would occur if each year the same eight teams were to qualify for the quarterfinals. Thus, the smaller the number of teams among the elite, the more concentrated the competition.

The second measure (the Gini coefficient) is based on an assignment of points: we give 4 points to the winner of the competition, 3 points to the finalist, 2 points to each semi-finalist, and 1 point to each quarterfinalist. Since the points are given for each round, that means that the winner gets 10 points (4+3+2+1), the finalist 6, the two semi-finalists 2 and the four quarterfinalists 1 each. We then calculate the concentration of results within each five-year interval. Thus, an increased concentration will not be

¹² The new format of the league evolved when the European soccer federation UEFA was faced by the threat led by the owner of AC Milan, the future Italian Prime Minister, Silvio Berlusconi that the top European teams will withdraw from the UEFA-sponsored cups and create their own league. The sale of the television rights for such a league also featured prominently in Berlusconi's idea.

¹³ The number of slots per country is not fixed but is a function of each country's clubs' performance in the previous year's of European competitions (and, of course, of the performance of each club itself). Thus the best clubs qualify directly. But also if the Italian league were suddenly to deteriorate, and its clubs to do badly in European competitions, the number of slots would be reduced. The allocation system is quite a complex one but the essential point is that it sought to replace a one country-one vote system by a quality adjusted on importance of the commercial factors.

reflected only in the number of teams that are part of the elite (as in the first measure) but also in the fact that, over a five-year period, the best teams will tend to be the same (e.g. the same team tends to win each year, or to be the semi-finalist etc.) We need to take both measures into account. The first measures concentration of the elite, the second the concentration of the elite and the concentration *among* the elite. To explain: it could happen that the number of teams that are quarterfinalists decreases—thus we have a concentration of the elite—but that on the other hand, the concentration among these few (say, a dozen) teams goes down. Theoretically, the concentration among them could be very small as each of them, almost randomly, ends up by being a winner one year, a finalist another, semi-finalist the third etc. Our second measure takes this aspect into account as well.

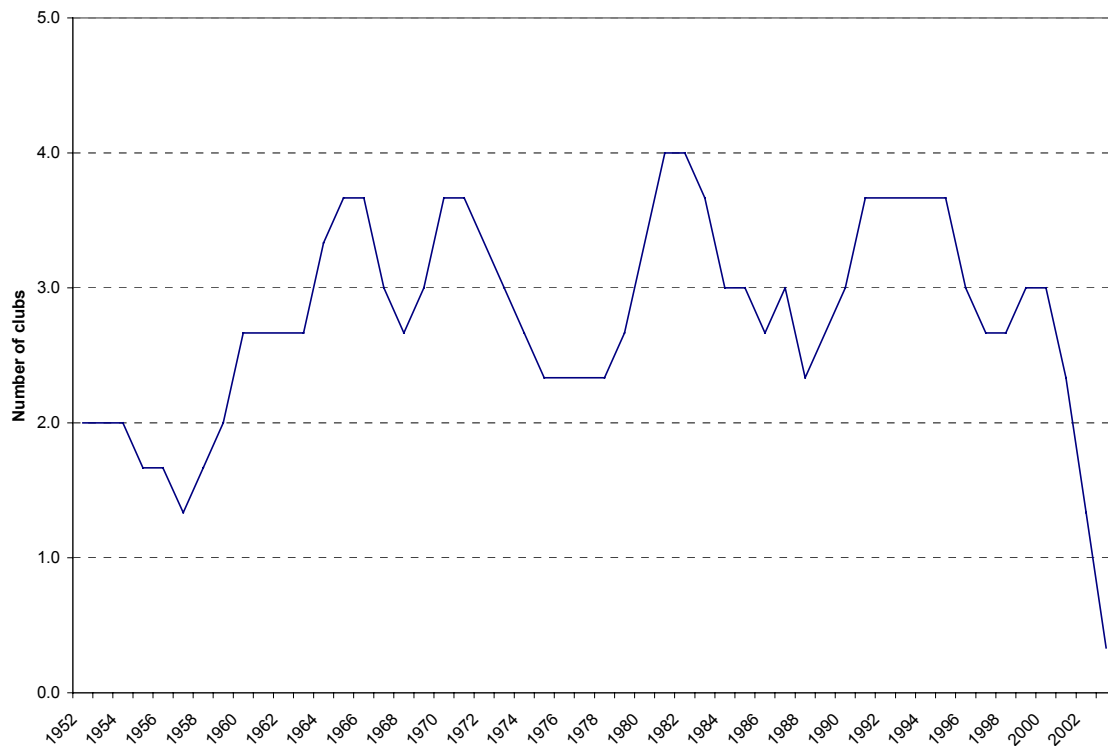
Table 1 shows these two measures. As we postulated in our hypothesis, from the late 1980's we observe an increasing concentration, both of the elite and among the elite. While in the 1960's and the 1970's between 28 and 30 teams qualified for the elite during each quinquennium, that number has steadily decreased since the mid-1980's to only 22 in the most recent five-year period. In addition, we notice an increased concentration among the elite: the concentration coefficient has increased from about 62 in the mid-1980's to 77 in the most recent period, the highest value ever.¹⁴ What is interesting is to contrast the *deconcentration* which took place between 1963 and 1987 with the Gini coefficient going almost steadily down, and then a sharp reversal of the trend during the last 15 years. During the last decade—the period which coincided with a markedly increased mobility of labor, freer competition, and greater club commercialization—the concentration of club quality increased quite significantly. In conclusion, there is little doubt that the premier European club competition has become much more concentrated (in terms of success) as global soccer market has come to life.

Our second example dealing with clubs takes the composition of Italian Serie A. Italy is interesting not only because its championship is probably the toughest in the world, but also because it is economically divided between the rich North and the poorer South. In that Italy is unique: income differences between Lombardia and Mezzogiorno are much greater than among the parts of Germany, England or Spain which also have first rate national leagues. Thus, given the same level of soccer interest among the population (a hypothesis which we can easily accept for Italy), greater commercialization of club soccer should increase the share of clubs from the richer North. This is indeed what we notice in Figure 2 which plots the three-year average number of clubs from the

¹⁴ Note that the minimum concentration is not zero as in ordinary inequality measurement. Here, we are dealing with a hierarchical system where there must be a winner, a finalist etc. If both the clubs and the elite were totally dispersed, there would be (in each five-year period) 20 quarterfinalists, 10 semifinalists, 5 finalists, and 5 winners. Assigning them the points (1 to 10), yield a concentration coefficient of 46.1. The maximum concentration coefficient is not 100 either. If there is an extreme level of concentration, there would be only 8 same teams in the elite each year, and the winner would be always the same team, the finalist too, the semi-finalist would be the two same four teams etc. In that case, 32 clubs will be allocated zeros (they never made it to the elite); 4 clubs would be “earn” 5 points (always quarterfinalists), two clubs, ten points each; one club twenty points. The concentration coefficient would be 89.2.

South in the Italian Serie A.¹⁵ The average number of Southern clubs used to be vary between 3 and 4 (out of 16 to 18 clubs in the Serie A) during the entire period from 1960's to the-1990's. Now, for the first time since World War II, in 2002 and 2003, there are no Southern teams at call in Serie A. The “purgatory” has been complete and it included such clubs like former Italian champions Napoli and Cagliari. Both are now in Serie B.

Figure 2. Three-year moving average of the number of Southern teams in Italian Serie A



Source: Data from <http://www.soccerage.com/en/23/00001.html>.

Our example, dealing with national teams, is taken from the World Cup. Here we cannot adopt the same methodology because the World Cup takes place only once every four years. We shall measure concentration differently, first, by looking at the number of “new” national teams that have qualified for the quarterfinals (that is, national teams that previously have not qualified for among the top eight), and then at the goal difference between the members of elite. If quality between national teams is gradually getting more similar, then we would expect—in contrast to the situation at the club level—to find an increase in “new” national teams (as previous outsiders join the elite), and a reduction in the goal difference among the elite teams. Calculations are shown in Table 2.

¹⁵ The South is defined conventionally as Italy South of Rome.

Table 1. Concentration of winning teams in the League of Champions within each five-year period

	1958- 62	1963- 67	1968- 72	1973- 77	1978- 82	1983- 87	1988- 92	1993- 97	1998- 2002
Number of teams who have qualified for the quarterfinals	30	26	28	28	30	29	26	26	22
Concentration coefficient (Gini)	65.9	73.5	68.1	70.0	64.3	62.2	70.2	72.0	76.9

Note: The maximum number of teams among the top eight is 40, the minimum 8. The maximum concentration coefficient is 89.2, the minimum is 46.1.
Source: <http://www.uefa.com/competitions/ucl/AllTimeStatistics/index.html>.

Table 2. Post World War II World Cups

	1950	1954	1958	1962	1966	1970	1974	1978	1982	1986	1990	1994	1998	2002
Number of “new” teams among the top eight	na	2	3	1	2	2	3	0	1	0	2	2	2	3
Goal difference among the elite	2.50	2.33	2.38	1.50	1.63	1.75	1.43	1.71	1.19	1.00	0.63	1.13	1.25	0.88

Note: The “elite” always includes eight top teams except in 1950 where the second stage of the completion was directly “semi-finals” (four top teams), and in 1982, where due to a peculiar rules, the “quarterfinals” stage included 12 teams. “New” is defined as a national team that had never previously qualified among the top eight teams. In 1950, the competition went straight to to-four stage.

Source: <http://fifaworldcup.yahoo.com/02/en/pf/h/pwc/index.html>.

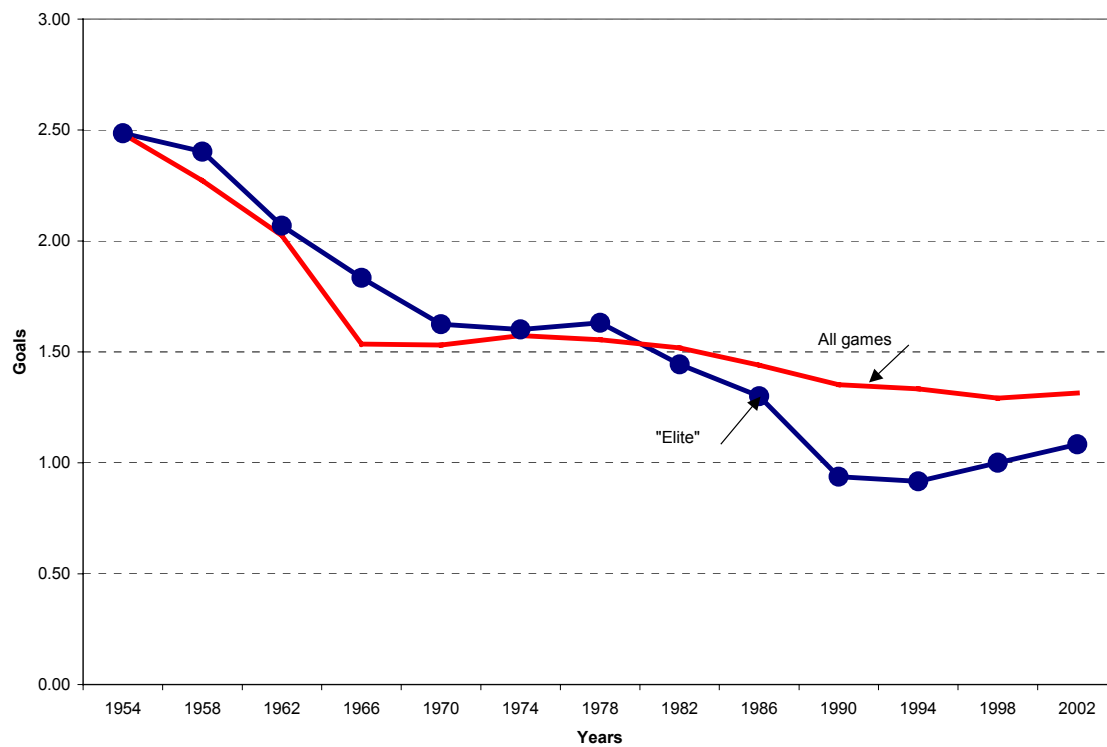
The results show that after a period of strong dominance of the traditionally best soccer nations (Brazil, Germany, Argentina, Italy) in the 1970's and 1980's, the situation changed in the 1980's. In the four latest World Cups, there were always at least two newcomers among the top eight national teams. In each Cup, therefore, the newcomers represented about $\frac{1}{4}$ of the elite. Note also that the very way the calculations are done biases the results against our hypothesis (the increase in the newcomers) because as more nations make it at least once to the elite, they lose the status of the "newcomer." In other words, the pool of the potential newcomers is gradually getting smaller. Thus if Turkey, a traditional soccer lightweight, which qualified among the top eight (and the top four) in the last World Cup, were to be part of the elite in the next World Cup, it would not be treated as a newcomer any more.

The quality difference between the elite, measured by the average goal difference between the winners and losers during the elite games (quarterfinals and higher), shows a gradual decrease. In other words, the quality differences between national teams seem to be getting smaller. After always exceeding two goals in the 1950's, the difference was above 1.5 goals in the entire 1962-78 period. But beginning with 1982, the maximum difference was 1.25, and the average difference was one goal. Figure 3 shows the three-World Cup rolling average where the gradual decline in the goal differential is apparent.

The same decrease in the goal differential is present for if we look at all national teams participating in the World Cups. This is perhaps even more indicative of the general leveling of quality because the number of nations participating in the World Cups has expanded from 16 in the 1950-1978 period to 24 between 1982 and 1994, and then to 32 since 1998. The expansion has opened the doors of the World Cup to many countries without much experience of the game and whose performance might have been expected to be rather mediocre (and hence that they would lose with large goal differences). And while it has indeed happened a few times,¹⁶ this was not the case overall—and the average goal differential has continued to decrease.

¹⁶ In 1974, Yugoslavia beat Zaire by 8-0, and in 2002, Germany similarly overwhelmed Saudi Arabia by 8-0.

Figure 3. Goal difference among World Cup all national teams and World Cup elite
(three World Cups rolling average)



4. Conclusions: implications for “alter-globalization”

The paper argued that free circulation of labor, increasing returns and endogenous skills will, under the conditions of unequal initial distribution of resources, tend to produce an increasing concentration in outcomes whether it be income or soccer results. The model is a simple one and is based on a few assumptions, the important one being the increasing returns to scale—an assumption that is sensible to make for many complex production processes. Free circulation of labor and increasing returns lead to an overall increase in output, or in the model here, in the quality of soccer as best players are paired to play with those who are also among the best.

The problem is that, under the purely commercial rules, this overall improved quality of the game is accompanied by increased inequality. The (soccer) poor countries that “export” their players receive nothing. Best players themselves are better-off because they are paid more and because their quality improves as they have a chance to learn new skills by playing with better players than had they stayed at home.

The welfare effects are ambiguous too. There is no doubt that the improved quality of the game and vastly better telecommunications (including live transmission of the most important national league games all over Europe) have provided lots of additional pleasures to the soccer *aficionados*. Thus, on an average weekend, an ordinary soccer fan in Europe can watch without leaving his room the best Italian, or Spanish or English teams battle each other. The sport has become truly global not only in drawing players from across the globe but providing supporter bases for clubs far away from their traditional home base. Thus Manchester United has a very strong following in Asia and more recently in North America.¹⁷ English Premier league games are routinely transmitted and watched all over Asia. But there were also some losses. Medium-sized cities, by population or wealth, have all but lost a chance of ever hosting on their local fields the world’s best clubs. While Champions’ Cup in its earlier set-up allowed the best teams from say, Switzerland or Bulgaria to meet, with the lack of a draw, Real Madrid and thus provided to local audiences an opportunity to see the best players of the world not only on TV but in flesh, the new arrangements make such a possibility fairly remote. Had Berlusconi even more radical proposal been accepted, the best teams would have never played with second-tier teams. There is thus a clear segmentation: the best play with the best, the second-tier with the second-tier and so forth. This in turn must have led to some loss of welfare among the fans because of attachment to local clubs and desire to see them, at least from time to time, measure themselves up against the very best. But, as mentioned, this has taken place against the backdrop of significantly improved overall quality of the game.

In order to redistribute overall gains from higher global output, some overarching global rules are needed. They are provided, in soccer, by the role of FIFA, the

¹⁷ Manchester United has official supporter clubs in Hong Kong, Malaysia, Singapore and Japan (see <http://www.unitedmanchester.com/sport/mufc-supporters-asia.htm>).

international soccer body that regulates competition between national teams. FIFA rules prohibit switching of national teams. Thus the rich countries cannot buy poor countries' soccer player to play in the World Cup. And (soccer) poor countries are able to capture the benefits of higher skills acquired by their players abroad when they temporarily return home to play for their national squads.

Similarly, if greater freedom of circulation of labor is introduced, we might expect an increase in world level of output. But this might come to a cost of increased inequality, further exclusion of poor countries, and some loss of welfare due to the loss of "local flavor." For the process to be more socially acceptable and more equitable, it is therefore necessary that some global, *non-commercial*, rules accompany market-driven globalization. Borrowing from FIFA rules, one could envisage an obligation, enforced by the international bodies, whereby all highly-skilled emigrants from poor to rich countries would be obliged to spend one year out of each five, working in their native country, for a total of say, up to four or five years over their working lives. This could be made a requirement for the issuance of work permits in rich countries. Such rules are unlikely to be imposed and enforced by individual rich countries because that would place them at disadvantage compared to their competitors. But if the rules were global, each rich country would be obliged to follow them and would be equally affected.

As in the World Cup, where soccer poor countries are able to capture "leg" improvement of their players once every four years in the World Cup, income poor countries would be able to capture some of the "brain" improvements of their workers. This type of socially more conscious globalization would combine the purely commercial interests (reflected in best players being picked by richest clubs) with the existence of a global authority that would impose non-commercial rules, and mitigate somewhat the harshness of the commercial-only outcomes. Without an overarching authority there cannot be, as we have seen in the soccer example, capturing of the gains by poorer nations. In other words, there is no reversal of the leg drain. The soccer example illustrates the desirable type of globalization: do away with limits to labor mobility, increase the overall output through interaction between people, make use of increasing returns to skills, but then reinsure that some of the gains are shared by those who do not have enough economic power.

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